

ABSTRACT

Disclosed is a reforming-catalyst composition, which allows highly concentrated hydrogen to be produced at a low S/C ratio in steam reforming of a hydrocarbon material equivalent to naphtha or kerosene, while maintaining catalytic activity over a long time-period. The reforming-catalyst composition comprises nickel oxide and lanthanum oxide as a catalytic material for inducing a reaction between steam and hydrocarbons equivalent to naphtha or kerosene to produce a hydrogen-containing gas. The nickel oxide and lanthanum oxide are partly or entirely formed as a perovskite-structured compound. The reforming-catalyst composition may further include an additional oxide, such as alumina, silica or zirconia, and the perovskite-structured compound may be formed on the additional oxide to provide a catalyst carrier. Further, the reforming-catalyst composition may include nickel or ruthenium supported by a catalyst carrier including the perovskite-structured compound.